River Mile 10.9 Removal Action Post-Dredge Sediment Sampling Plan, Lower Passaic River Study Area

Prepared for

Cooperating Parties Group, Newark, New Jersey

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Acronyms and Abbreviations

COPC	chemical of potential concern
LPR	Lower Passaic River
LPRSA	Lower Passaic River Study Area
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PCDD	Polychlorinated Dibenzo-p-dioxins
PCDF	Polychlorinated Dibenzofurans
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RM	River Mile
TAT	Turn-Around Time
USEPA	United States Environmental Protection Agency

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1. Introduction

1.1. Overview

The CPG has agreed to perform the actions necessary to remove, treat, and/or properly dispose of sediment from the RM 10.9 Removal Area due to elevated concentrations of polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans (PCDDs/PCDFs), polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), mercury, and other chemicals of potential concern (COPCs) and the potential for receptors to be exposed to them.

The RM 10.9 Removal Action objectives are to mitigate potential threats to public health and the environment posed by the presence of COPCs in the RM 10.9 Removal Area surface sediment and to minimize COPC bioavailability. The RM 10.9 Removal Action includes dredging of sediment to a predetermined depth (uppermost 2 ft), followed by an engineered cap, constructed, monitored, and maintained as described in the RM 10.9 design.

1.2. Sampling Objectives

USEPA has directed the CPG to collect 20 surface sediment samples within the Removal Area to characterize COPC concentrations in the residual post-dredge sediments. Sampling locations were selected to provide representative coverage of the Removal Area. This sediment sampling plan presents the proposed sample locations, sampling methods, and analytical methods that will be used.

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2. Field Activities

2.1. Sediment Sample Collection

Surface sediment grab samples will be collected at 20 locations using a ponar grab sampler or push corer. The proposed sample locations are presented in Figure 1. The surface sediment samples will be collected up to 0.5 foot in depth below the sediment surface. If the accessible sediment depth at a given location is not sufficient to generate the required sediment volume or if large rocks and other impediments are encountered while sampling, additional sediment volume will be collected and composited within a 1 to 2 foot radius from the original location.

2.2. Duplicates and Quality Control

One duplicate sample will be collected as part of this sampling based on a frequency of 1 per 20 samples. The field duplicate will be collected by homogenizing the sediment collected from the grab sample and then distributing the sample material between two sets of containers, each uniquely identified. The parent sample and the field duplicate will be submitted to the laboratory, analyzed, and reported as separate samples. One equipment rinsate blank will be collected if dedicated (single location) supplies are not used.

2.3. Equipment decontamination

The sampling equipment, stainless steel bowls/containers, and stainless steel spoons/spatulas will be cleaned prior to initial use and between each sampling station (if reused). A sufficient supply of pre-cleaned small equipment will be mobilized to the sampling locations to minimize the need for performing field decontamination. However if larger equipment is needed (e.g., ponar grab sampler), it will require field decontamination on the vessel between sampling stations.

2.4. Investigative Derived Waste (IDW)

PPE and disposable sampling equipment will be characterized based on whether these materials have come in contact with contaminants. If direct contact is experienced or suspected, the wastes (PPE or disposable sampling equipment) take on the same characteristics as the contacted media. Unstained equipment will be disposed of as municipal solid waste at the time of generation. Stained gloves and other sampling equipment will be wiped down, double bagged, and disposed of as municipal trash. Because of their nature and use, these types of waste cannot be reused, recycled, or treated. Plastic buckets will be decontaminated with an appropriate decontamination solution and reused to the maximum practicable extent.

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3. Analytical Methods

3.1. Sample Analysis

All sampling procedures and analytical methods will be performed pursuant to the RM 10.9 Lower Passaic River Study Area River Mile 10.9 Characterization QAPP, Revision 3, dated October 21, 2011. The sediment samples will be analyzed for the following parameters:

- PCDD/PCDF congeners using EPA Method 1613B
- PCB (homologs and congeners) using EPA Method 1668A
- PAHs and alkyl PAHs using a laboratory-specific SOP ID-0016 (based on California EPA Air Resources Board Method 429 and NOAA ORCA 130 Method)
- Low-Level Mercury using EPA Method 1631
- Total Organic Carbon using the Lloyd Kahn Method

3.2. Sample Handling Requirements

Sediment samples will be collected and handled in accordance with the requirements summarized in the table below.

Matrix	Analytical Group	Sample Size (Minimum)	Containers	Preservation Requirements
Sediment	PCBs (Homologs and Congeners)	45 g	8 oz wide mouth glass	During shipment: 0-6°C; store in the dark; upon arrival at lab: store at <-10°C in the dark
Sediment	PCDD/PCDFs	20 g	2 oz wide mouth glass	During shipment: 0-6°C; store in the dark; upon arrival at lab: store at <-10°C in the dark
Sediment	PAHs and Alkyl PAHs	45 g	8 oz wide mouth glass	During shipment: 0-6°C; store in the dark; upon arrival at lab: store at <-10°C in the dark
Sediment	Low Level Mercury	20 g	2 oz wide mouth glass	0-6°C during shipment; upon arrival at lab: store at ≤ -15°C
Sediment	Total Organic Carbon	20 g	8 oz wide mouth glass	0-6°C

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3.3. Analytical Turn-Around Times

To facilitate receipt of analytical results, samples will be delivered to the laboratories on the same day that they were collected (to the extent possible) and expedited turn-around times (TAT) will be requested for all parameters. However, the exact TAT per analyte will be unique to the analytical method/procedure, and laboratory availability. Expedited TAT may not be available for all analytes.

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4. Reporting

Unvalidated analytical sampling results will be reported to USEPA within 5 days of data receipt. Note that the laboratory reports PCB and PCDD/PCDF congener values and therefore totals (e.g., total PCBs) are calculated by the CPG.

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Figures

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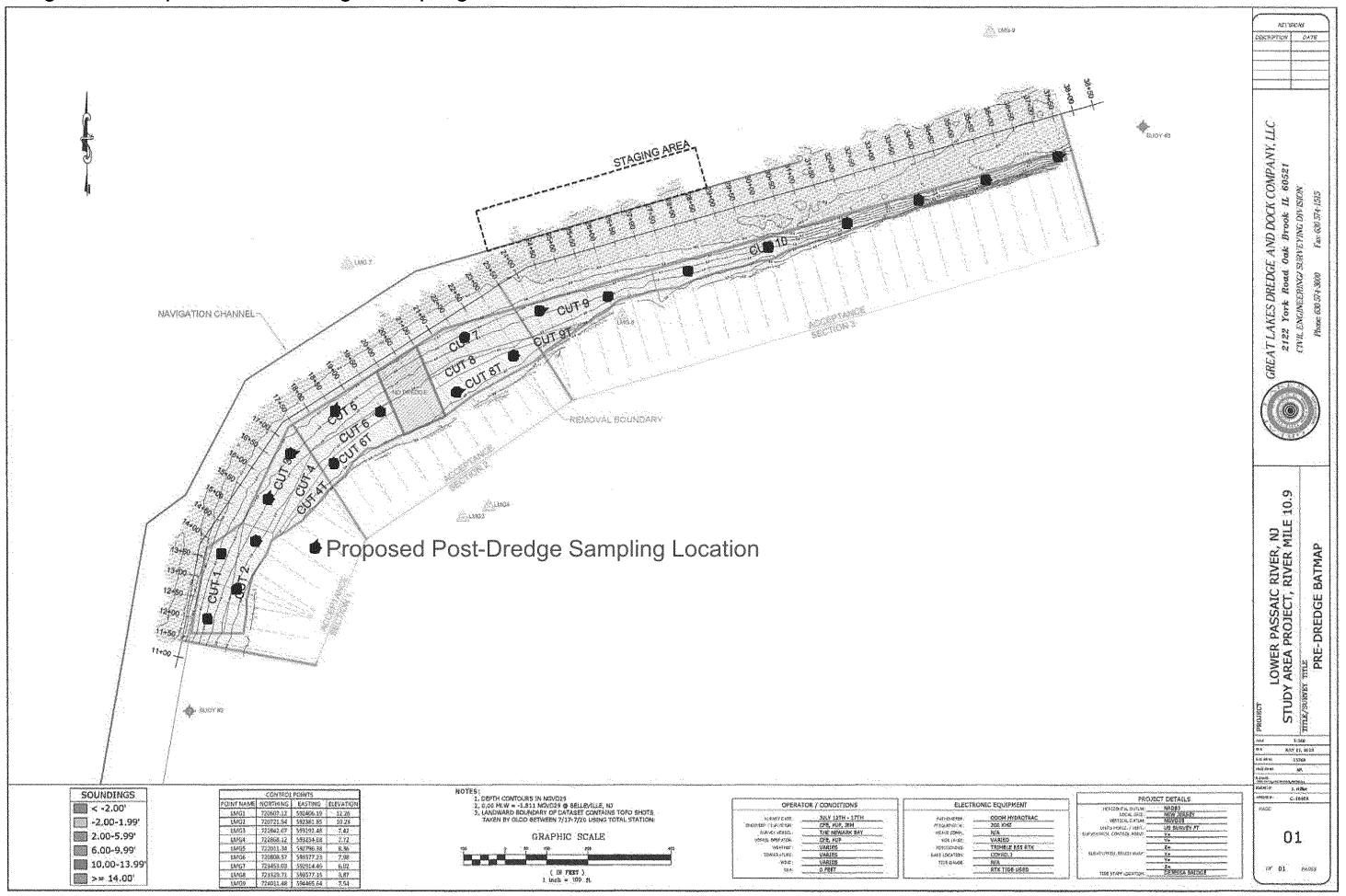
Figure 1. Proposed Post-Dredge Sampling Locations



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